

White Paper
NEH Award HAA-255998-17 • VESPACE
Jeffrey M. Leichman and Françoise Rubellin, co-Principal Investigators

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Report Overview

The following white paper is divided into three main sections. Section I provides a summary recap of principal activities undertaken during the grant period. Section II describes progress towards goals articulated in the grant proposal, as well as priority areas of activity moving forward.

Section III is comprised of major lessons that we have drawn from this experience, divided into five subsections treating important areas of critical reflection. Part A has to do with intended publics for the VESPACE project, and the way that this consideration has continued to evolve over the course of our work. Part B discusses the particularities of the collaboration in the VESPACE project as a model of collective authorship. Part C addresses institutional concerns and proposes a reflection on the conditions of production in digital humanities research. Part D highlights some examples of how this project has given rise to a variety of serendipitous tangential opportunities, and articulates this openness as a core value of our work. Part E retraces the important epistemological considerations raised by the project, and discusses some implications of “image depth” as praxis in sensory-oriented digital humanities projects.

Attachment A includes a summary of activities and discussions from the project meeting at LSU on November 2-3, 2017. Attachment B includes a summary of activities and discussions from the project meeting at LSU on April 19-20, 2018. Attachment C includes a list of team member presentations and publications related to grant activities.

I. Recapitulation of principal activities

The VESPACE (Virtual Early modern Spectacles and Publics, Active and Collaborative Environment) was awarded NEH Award HAA-255998-17, a Digital Humanities Advancement Grant (Phase I) in the amount of \$39,982. This grant was for initial development of a project to design a video game based on the marginal theatres that flourished at church-sponsored fairs in eighteenth-century Paris. There were nine original team members, under the leadership of co-PIs Jeffrey Leichman and Françoise Rubellin, drawn from universities across the US and Europe: LSU, Washington University in Saint Louis, MIT, l'Université de Nantes, l'Ecole Centrale de Nantes, and Durham University, England; with the exception of one team member who left academia, all of the original participants were able to participate in at least one of two meetings held at the LSU campus (on November 2-3, 2017 and April 19-20, 2018, respectively) to discuss the project and make plans for its implementation. (For detailed information on the activities in these meetings, see attachments A and B.) The grant served to support travel and lodging for these meetings; it also funded a workshop by Ben Samuel, a late addition to the project team, for graduate students at LSU on January 25, 2018; as well as travel by PI Jeffrey Leichman to the NEH ODH Project Directors' meeting on February 9, 2018; and to the Centre Culturel International de Cerisy-la-Salle from September 22-29, for presenting project

results to an international audience in the context of a weeklong conference on history and reenactment.

Work on this project is ongoing, including publications that are in progress or under review; numerous public presentations at professional gatherings and before the general public in both the US and Europe; a new undergraduate course at LSU; and further work on implementation of graphic and social interfaces (see attachment C). Key team members have been added, notably Ben Samuel, Paul François, and Mylène Pardoën. Important further sources of financial and material support have been obtained through the LSU Department of French Studies (which funded meeting meals at LSU, and undergraduate student travel to France to present coursework at the Université de Nantes); the Jacques Arnaud Professorship in French Studies at LSU (travel for team members to Nantes); the Institut d'Etudes Avancées de Nantes (support for graduate student social rules workshops); and the French government (full funding for a three-year PhD in cultural preservation for team member Paul François). Further grant applications are in development, including at NEH and in Europe, to support continuing work on this project.

II. Progress toward Project Goals

The initial proposal for VESPACE defined four principal objectives:

- a) Establish the floor plan and architectural features of an historically accurate virtual Fair theater space;*
- b) Determine the text(s) that will comprise the theatrical entertainment, as well as modalities for digital capture of a live performance;*
- c) Develop avatar profiles, story lines, and characteristics, integrating historical research with computerized behavioral modeling;*
- d) Generate detailed roadmaps for continued research and implementation.*

Over the course of our meetings and the many exchanges that preceded and followed them – both with team members and with interested researchers from our varied scholarly networks – we came to have a better understanding of the scale of the work ahead of us, as well as which areas required a significant theoretical debate prior to considering implementation strategies. These discussions also helped us understand as a group where our areas of strength and weakness lie. While we have made significant progress on the conceptual and procedural problems around architectural modeling, and established a working process and software for modeling audience behavior, development around avatar design, performance capture, and gameplay remain priorities for development in subsequent phases of our work.

- a) Establish the floor plan and architectural features of an historically accurate virtual Fair theater space;*

When we began work on this project, there were no extant architectural plans for theatrical spaces at the Foire Saint-Germain and the Foire Saint-Laurent. At

the time, our supposition was that work on reconstructing these crucial sites of cultural exchange would proceed from visual sources of dubious reliability, necessitating the development of critical tools that would allow us to re-create historically and architecturally appropriate spaces. Here, the advantages of interdisciplinary and international collaboration were especially apparent; the project was able to recruit a doctoral student, Paul François, whose dissertation is advised by both Florent Laroche, in computer engineering and cultural preservation, and Françoise Rubellin, in eighteenth-century French literature and culture. Mr. François, who is also a licensed architect, brings significant experience with archeological approaches to computerized reconstruction of destroyed structures, and his work has proved to be decisive with respect to how we understand the spatial component of this project, as well as how it is experienced in the VR environments that he has already programmed.

During our meetings, we vigorously debated how to responsibly proceed in modeling a space, in full awareness of the fact that the sensory impact of the simulation would likely make it a very convincing artifact that would pass for “real” for most casual users. (This conviction also stemmed from a virtual reality demonstration that introduced project participants who had no previous experience with this technology to its potential as an immersive research tool.) After exploring a number of possible visual sources, we settled on a miniature by Louis-Nicolas van Blarenbergh depicting a marionette theatre, as the first space to model. Our justification for this was also in view of the project’s further goals: a smaller theatre with a more homogeneous social topography and a spectacle that could be re-created at a relatively more affordable scale would allow us to test out hypotheses about possible VR interfaces with gamer physicality, metadata accessibility, and gameplay at a more manageable scale. In addition to allowing us to work on perfecting certain technical and procedural challenges, this model continues to present a vast array of interesting cultural and literary-historical problems, and thus remains a very valuable goal to pursue in its own right.

Furthermore, in the course of archival research on the peregrinations of Fair theatre producers and troupes, Paul François and Françoise Rubellin discovered a complete set of plans for a new theatre at the Foire Saint-Germain, designed following the 1762 fire that destroyed the massive wooden roof that covered the Fair, as well as gutting its interior. While it is not clear that this theatre was ever actually constructed, it nevertheless represents a reliable, architecturally sound, and highly detailed planning document that indicates the ideal physical contours of a theatre at this venue. Mr. François subsequently modeled this space in the Unity game engine, and it exists as a fully explorable theatre, including ancillary spaces (a café, a ticket window, staircases between floors, stage machinery, etc.), as well as a reduced scale model that can be examined from the outside. For the moment, these models contain only information that is explicitly included in the plans; as a result, the spaces are lacking in many of the textural and decorative details of the marionette theatre model. At present, this is a useful VR representation of a rare set of architectural drawings. If we choose to move forward with using this as the space in which a second, more fully developed

version of the game takes place, these details will be filled in based on historical research and existing interiors and artifacts from this period, with the interpretive choices subjected to the same process of documentation and justification as in the currently more developed marionette theatre model.

The soundscape of an eighteenth-century theatre was one element that we neglected to take into consideration in our initial planning around the reconstitution of a theatre space. This lacuna has been in part addressed by the participation of Mylène Pardoën, a “sound archeologist” whose *Projet Bretez* is a demonstration of the methodology she has developed for digital reconstruction of past aural environments. Ms. Pardoën’s work is notable for its historical and acoustical rigor, and her presence at the second of our two meetings, which included public-facing roundtable discussions of the project’s goals and progress, provided crucial information about how the overall texture of the immersive experience can be enriched at the same time as its documentary content. We were also able to engage in a fruitful dialogue about how to incorporate the ideas of image depth into a time-based medium like sound recording, for which we developed a working hypothesis around the idea of small loops that can be activated, pausing the forward motion of the track and isolating sonic phrases that are then available for deeper exploration. This will also be of interest with respect to the recorded stage performance, which displays similar complexities with respect to the ability to embed deep documentation in a way that allows users access without sacrificing temporal continuity.

b) Determine the text(s) that will comprise the theatrical entertainment, as well as modalities for digital capture of a live performance;

In our initial meetings, the central problematic of simulating audience interactions during a performance has taken precedence over the issues surrounding selection of dramatic texts and representing the Fair’s literary diversity. This is in part due to a higher degree of confidence in our group’s ability to make appropriate choices with respect to repertoire. The massive online and paper-based editorial projects undertaken by co-PI Françoise Rubellin over the past two decades have brought a great number of manuscript plays to a much wider public; while only a few of these will figure in the VESPACE project, a deep knowledge of and experience with this corpus is one of the team’s major strengths.

Within the game as it is currently conceptualized, the onstage performances serve as the game clock, and as such must unfold in a relatively linear and predictable manner in order for players to be able to learn to time their interventions according to the rhythms of the play; this has the ancillary effect of motivating close attention to the interaction between spectacle and audience. At the same time, certain alternative endings must be possible; for example, the possibility that a successful claque might bring down the play is a scenario that we are committed to preserving. For this and other reasons, it seems that proceeding to performance capture too quickly might seriously limit our ability to make the stage-play a pliable and dynamic element of our overall experience.

For the prototype, we have not yet selected a performance text, but have established a preliminary agreement with Jean-Philippe Desrousseaux, a puppet artist with extensive experience in re-creating eighteenth-century works, to mount the piece. We have submitted funding applications in France to finance the creation and capture of a marionette performance, which will take place at the Ecole Centrale engineering school in Nantes.

c) Develop avatar profiles, story lines, and characteristics, integrating historical research with computerized behavioral modeling

In the summer of 2018, two MA students in computer-based design were selected to complete their professional internships (a required component of their degree program) with the VESPACE project, with stipends funded by an ANR grant previously obtained by Françoise Rubellin. The results were decidedly mixed, and point to the need for team members with greater graphic design and avatar design experience. (It is also possible that this aspect of the work, to the extent that it presents a lesser research interest for those involved in building it, might be turned over to a contractual worker or company that could produce the desired elements quickly for a fixed price.) One very fruitful result was a collaboration with the costume shop at the Nantes-Angers Opera, where the shop manager shared design patterns for eighteenth-century clothing with the intern designing “Victorine,” lending a greater visual unity to the presentation and providing the kind of deep information that underwrites the scholarly interest of this game model. We are very interested in continuing to pursue this partnership, and others like it, out of the conviction that all parts of this simulation must maximize the transmission of historically valuable information or theories about the sensory world of the eighteenth century.

The behavioral modeling included in the original grant proposal was largely prospective, but with the addition to the project team of Benjamin Samuels, assistant professor of computer science at the University of New Orleans, we have taken a very large leap forward towards making this a reality. Mr. Samuels’ previous work has been in the field of simulated social interactions, notably in his work developing the game *Prom Week*, which allows players to navigate their avatar through the high-pressure days leading up to prom at an American high school in the early 2000s. The game developers invented an artificial intelligence system that they dubbed a “social physics engine,” which encodes a wide variety of traits and attributes for all characters within the game universe, and then dynamically recalculates interpersonal relationships based on their interactions. This model provides a robust and innovative way to simulate exchanges based on shared social codes; in the case of *Prom Week*, these were developed through an ethnographic reading of popular movies and TV shows depicting contemporary American high school life, in order to generate as many as five thousand hand-authored social influence rules that allow for interactions to be processed as mathematical functions, while giving the illusion of authentic interpersonal exchange.

Ben Samuels is now a central team member of the VESPACE project, for which he is adapting a revamped version of the social physics engine to conform to the very different gaming environment and sociological model of our project. For our second meeting at LSU, he designed a custom authoring tool and led a workshop on writing social influence rules based on eighteenth-century comportment with project members and graduate students enrolled in Jeff Leichman's eighteenth-century French literature seminar. This immensely valuable experience pointed to both the kinds of conceptual changes needed in the social physics engine (inclusion of *état civile* / caste status; reorientation of certain categories; adding spatial and comportmental components to the calculation of an interaction's effectiveness; and a means for documenting specific sources of individual rules), and the very particular kinds of close reading skills required in order to transform literary sources into information that can be exploited by the social physics engine. Following the workshop, some of the graduate students opted to continue working with the authoring tool for their final project, developing short interactive schemas based on scenes from eighteenth century novels. This in turn showed a promising way forward for incorporating, and even recruiting, emerging eighteenth century scholars, by offering a new outlet for literary research in the digital humanities context. Two intensive multi-day graduate student workshops are now planned, in France and in the US, to focus on significantly advancing the rules-writing process.

d) Generate detailed roadmaps for continued research and implementation.

This document, along with the intermediate report filed in April, includes many of our plans for future implementation. We are concurrently engaged in writing multiple funding requests in order to support continued work on this project, all of which necessitate articulating detailed plans for further development. Keeping in mind the goal of developing a playable prototype, our efforts will be focused on major areas where there remains significant work to be done in order to arrive at a playable prototype: modalities of interactivity and normative evaluation of communicative acts (verbal and gestural); authoring a sufficiently robust and complete set of social influence rules that are also integrated within the Unity game engine; designing and animating NPCs; developing narrative and game objectives; designing the "image depth" interface for embedding access to metadata within the architecture; developing historically accurate "sound archeology"; and performance capture of a marionette play.

III. Takeaways

This was a Phase I grant, intended for exploration of an idea and its eventual viability for further development. The entire team is extremely grateful to have had the opportunity to devote time to this project, which elicits enthusiasm from nearly everyone to whom we have spoken, both in academic circles and in the wider public. The VESPACE team has used this opportunity to work out some of the theoretical implications of moving towards a graphically-oriented, interactive research format as a means to integrate findings across several fields of study, as well as to ask difficult questions about what our eventual goals are,

and what tools should be built in order to achieve them. Our debates, particularly during the meetings held at LSU in November 2017 and April 2018, were often quite vigorous, and we did not reach a consensus on every issue. However, we were able to clarify some important initial questions, and having already begun implementation on a number of fronts, we feel well-positioned to move forward with designing and building additional elements and working through the process of integrating them into a playable whole.

a) For whom?

One of the most important questions that arose, and which continues to arise every time we reach a major decision point about where to invest time and resources, is that of the intended public for our project. This is a question that has many different answers, which testifies to the vast reach of our conception, and to a potential danger in trying to please too many people, at the risk of pleasing none. There is a narrow channel to navigate here, as the needs of different sectors do not always overlap in complementary ways.

A video game set in an historically accurate reconstituted environment has a natural application in pedagogical contexts. This is a fact that has been seized upon by multinational video game corporations (the latest version of Assassin's Creed, set in ancient Egypt, includes an "instructional" mode), but which also dates back to the very beginnings of the ludo-cultural movement in gaming, with Cryo interactive's *Versailles: Complot à la cour du roi-soleil*, from 1996. In the case of VESPACE, the challenge has been to find ways to integrate our research into the material and social conditions of a long-lost eighteenth century theatrical form with a tool that also offers a point of entry to non-specialists – and in particular, to students, which is one of the main selling points of the "video game" model amongst humanists. At the same time, there is a resistance to the notion of making a "game," associated with unserious frivolity; in some computer engineering circles, the coexistence of a powerful and wealthy industrial gaming sector alongside "pure" research functions affiliated with universities has also been shown to be a source of tension when the project is framed as a "video game," a term tarnished by its commercial associations.

Unlike the setting for games geared toward leisure-oriented users, or even those that leverage historical or cultural touchstones in order to attract users with greater demands for cultural legibility, the spatial and decorative elements of our game design are shaped by research agendas in the academic humanities, on topics that often require years of study to make accessible. Recourse to video game form serves as a hook – rhetorically at first, although increasingly we are confronted with the practical implications of this positioning – to invite a wider audience to learn about these topics, and also to invite scholars to present their findings in an accessible, attractive format. The balance between erudition and vulgarization is not easy to achieve; too arcane, and we run the risk of an impenetrable and unappealing game; too simplistic, and we lose the scholarly audience whose adhesion is necessary to test out the potential of this communicational form for dissemination of research outcomes.

Nevertheless, the conjugation of these publics is central to the conception of our work. No matter how successful as a ludic experience, a game that does not advance knowledge or propose a new interpretive framework, in the manner of a traditional unit of discursive academic research would fail to meet one of our most important theoretical goals, which is to demonstrate that collaborative, visually-oriented digital projects can provide an alternative to single-author textual venues in the humanities. This move represents far more than a shift in material support – moving a print journal online, for example – but rather poses important questions about the nature of the authority that subtends academic conclusions, the accessibility barriers that determine access to research products, and the attribution of intellectual and institutional credit for the outcomes. This paradigm shift will require new literacies, in order for evaluators – both casual users and highly trained specialists – to assess the influence of design and gameplay factors *as academic interventions* alongside the more traditional examples of evidence-based research embedded in the game, themselves presented in novel forms through a deep-image interface. We are not proposing our model as the inevitable outcome of the re-mediation of knowledge work currently underway as a result of the digital revolution; there is no obvious *telos* inherent to this process, but as humanists we are committed to taking an active role in shaping the future of our fields, including conceptualizing and implementing plausible alternatives to a status quo whose continued viability is all but assured.

These same reflections apply to the other side of the traditional humanities equation, which is centered on the transmission of cultural knowledge. While inherited forms (novels, plays, films, etc.) are unlikely to disappear anytime soon, humanities educators ignore the rise of computer-based interfaces at their own risk. Embracing a video game format allows scholars to meet students on their own cultural terrain, in order to show that our disciplinary concerns are not medium-specific and perhaps even to help keep the humanities at the center of mainstream cultural conversations.

b) By whom?

The project of building a “video game” falls somewhere between the idea of a computer-based tool and a support for displaying scholarly expertise. This dual function (enabling research as well as highlighting our own results) also indicates the complex parentage of this project, a feature it shares with many digital humanities endeavors. While designing the interface requires a great deal of technical knowledge, the scholars participating in the initial investigation are primarily humanists, with a wide range of expertise including history, theatre, literature, dance, and philosophy; the original team also includes a data scientist, a specialist in the computer-assisted preservation of cultural and technological patrimony; and a specialist in real-time VR transmission (who subsequently left academics to pursue opportunities in industry). Over the course of the grant period, three other key researchers joined us, each with specific technical and

humanistic capacities: Paul François, a licensed architect with experience in modeling lost structures for archeological sites; Ben Samuel, a game designer specializing in social relations modeling and collaborative storytelling; and Mylène Pardoën, a “sound archeologist” specializing in the virtual reality reconstruction of historical sonic environments. In subsequent stages, we foresee working with specialists in VR user interface and avatar design/animation. We also have a preliminary agreement to work with noted puppet artist Jean-Philippe Desrousseaux in the creation of an original marionette performance based on a play from the Fair theatre repertoire.

As is often the case in this kind of collaboration, there is a steep learning curve for nearly everyone involved. The clearest example of this can be found in our ambitious goal to model social interaction in eighteenth-century public spaces, which requires traditional humanities research to be translated in such a way as to make a computer able to accurately represent an encounter, and determine its effects on both the immediate interlocutors and the wider world of the simulation. In the case of the “social physics engine” that we are developing for this project, this means establishing relevant social and emotional categories that determine the profile of a character (whether machine computer controlled or a user avatar) and writing a sufficient number of “social influence rules” to take into account a wide variety of possible encounters. This rules-writing process mobilizes close reading skills that, in another context, might be applied to developing a theory of social interaction in a more traditionally discursive research product, but here have to be conceived as parts of an algorithmic equation that weighs a combination of predicate conditions in order to determine their cumulative effects on the volition of the parties involved; the resulting states then become the predicate condition for the next set of interactions. While literary and historical knowledge are at the heart of this process, the explicative function of the researcher is displaced onto an experiential mediator – the computer program – that allows users to inductively learn about these conditions through performing them, rather than to read a description of them.

The notion of authorship in these circumstances becomes extremely murky, particularly as there are few models of similar projects in which the computer’s calculation results in a second-order interpretive result, rather than a more straightforward quantification (for example, in word-frequency searches of large literary data sets, or geographical mapping of different historical actors across time) that is then interpreted by a humanities scholar. The initial work of identifying and codifying relevant information (the first-order interpretation undertaken by a literary scholar, for example) is then submitted to an operation (written by a computer scientist) that combines many such original data points according to the situation. The crucial third interpreter here is the gamer, who may or may not have previous knowledge of the historical world being simulated, but whose decisions – about who to interact with, and the tenor of that interaction, in pursuit of discrete goals – serves to set the mechanism of calculation in motion. This is the crucial difference between a video game and other forms of time-based visual media, where the viewer is implicated through

a variety of devices meant to incite a feeling of identification but which, irrespective of their effectiveness, do not exercise a determining function on the progression of the narrative. By contrast, without the user's intervention, the calculations that draw on historical and literary evidence simply won't take place; similarly, each play-through is likely to trace a new path through the very large number of possible outcomes, making exact predictions of events impossible. This use-case models a process that resembles experiments in the natural sciences, in which conclusions are deferred until after sufficient data has been generated by running the complete scenario multiple times. While many non-humanities disciplines have a long tradition of multi-authored studies, this remains a relative rarity in literary and historical fields, and as such presents both opportunities for innovation and challenges for institutional evaluation.

c) *Pecunia nervus belli*

Cicero's famous phrase, "money is the sinew of war," has proved especially relevant to the experience of the VESPACE project, and almost certainly applies equally to many other digital humanities projects. While traditional literary research may involve travel expenses to consult rare resources or to debate findings with like-minded scholars, this largely solitary pursuit can also be undertaken in a much less resource-intensive manner, particularly at institutions with well-founded library collections and, in a modern context, appropriate interlibrary-loan and scholarly database access. By contrast, the many actors involved in a collaborative endeavor (particularly a graphics-heavy simulation project), as well as the specialized computing equipment needed, imposes a level of financial support that can often determine the speed, coherence, and even the project goals of a digital humanities undertaking. Moreover, in the case of projects (like ours) that aim for a wide student user base and also make use of emerging technologies, there is a cost borne by end users (or their institutions) that cannot be neglected: while universities sometimes seem more motivated to invest in equipment than in people, the inability to keep up in an equipment arms race risks exacerbating the already flagrant inequalities that characterize higher education in the United States.

VESPACE has been almost entirely funded from public sources, which has both advantages and drawbacks. While the NEH Digital Humanities Advancement Grant program is notable for its ecumenical approach to digital humanities, and its mission to support projects at different phases of development, the long timeline for funding decisions (roughly seven months from submission to notification for our project) can play havoc with timetables and the availability of partners. This is not to denigrate the Office of Digital Humanities, which to its great credit has two deadlines per year (twice as many as most grant programs), but simply to acknowledge that the flexibility and responsiveness that allow for dynamic development of new technologies in the private sector can be difficult to maintain when developing digital humanities projects in a university context. Moreover, inter-institutional collaboration – a necessity at many colleges and universities that do not have the faculty or material resources that allow projects to be developed using exclusively in-house expertise, as might be the case at

particularly well-off institutions – imposes additional costs any time project members wish to convene in person. (In the case of international collaborations, cost and complexity only rise.) This in turn can give rise to an inadvertent feedback loop, whereby the wealthiest institutions can do more with the same amount of money than those who are obliged to construct teams across time zones and borders, potentially exacerbating institutional inequities.

The flip side of this is the undeniable multiplier effect of awards from recognized sources, and especially from national-level competitions. The legitimacy conferred by the imprimatur of the NEH opens many doors, both within researchers' home universities and in future applications from agencies and foundations, conferring an institutional legibility that allows administrative instances to recognize the potential of a research project that otherwise might not have attracted significant attention. There is a risk here as well, that goes to the heart of critiques of the digital humanities turn, namely that projects attached to shiny, technologically-oriented tools and techniques will effectively use up all available oxygen, starving more traditional text-based research in the humanities. At a moment when the humanities are again a convenient straw man for certain kinds of political messaging during legislative budget and campaign seasons (issues that most immediately affect public universities), there is a legitimate concern that the bulwark against perennial accusations of the humanities' irrelevance provided by the integration of computing in our theories and methodologies, as well as the potential for these approaches to garner attention and funding, further relegates less media-friendly research endeavors to the institutional basement. As communications and computing centers displace libraries as the intellectual fulcrum of university campuses, maintaining a critical perspective on the ways in which financial and structural incentives are reshaping humanities disciplines is certainly warranted, even among those who stand to benefit most directly from this transition.

This report is the result of a project that was funded, and which has benefitted from support on many levels, but which is very much still a work in progress. In the gap between funding cycles, there is a dual imperative to keep the work moving forward while simultaneously pouring time and energy into applications for further support. While we are confident that our ideas and work products are robust enough to merit additional development, there are no guarantees in this domain, and there are no post-action analyses that accompany unfunded proposals, no matter how much effort and thought have been lavished on writing them. The ideal of academic freedom, especially as it has developed in the humanities, holds that researchers should be free to pursue goals that don't have an immediately obvious instrumental application, or which may be out of step with dominant ideologies or administrative priorities. In a field as dependent on external funding as digital humanities, this freedom risks being compromised as researchers tailor their intellectual projects to align with (implicit or explicit) directives attached to financial awards; as the amounts in play increase, so does the pressure to conform. As projects advance, more time must be expended shoring up resources for development, seeking support from a variety of sources whose criteria for judging fundability impose reformulations of project goals and

outcome evaluation. Across this iterative process, it is possible to learn a great deal about the plasticity and robustness of one's own project, highlighting the potential value in grant writing as a self-evaluative exercise. Nevertheless, the reliance on outside funding for digital humanities projects also represents an important frontier of unrecognized intellectual labor, as well as a potential minefield for intellectual cooptation.

d) *The Omnivore's Buffet*

The VESPACE project's goal is to create an immersive, interactive, computer-based simulation of an eighteenth century Parisian Fair theatre. The main project deliverable was conceived of as a piece of software that would both include a well-documented visual and behavioral thesis about this environment, and an opportunity to participate in this bygone cultural form by occupying the role of a spectator (giving rise to another data set, reflecting the capacities of modern gamers to successfully inhabit different historical subject positions and social situations). With these specific goals in mind, we have also adopted a more "omnivorous" approach to our collective work product, which illustrates what we feel is a major strength of highly collaborative digital humanities projects. Making a virtue of necessity, VESPACE has served as the vehicle for a new undergraduate class at LSU; provided the material for wildly popular exhibit at a public science festival; been the object of a broadcast radio story; and formed the foundation of several articles and over a dozen conference presentations in both humanities and technology research contexts. The federative capacity of this project (including collaborative initiatives with art museums, theatre schools, and between universities) derives in no small part from its conceptualization as a project in which literary-historical and technological aspects are equally implicated in the creation of meaning and the generation of knowledge.

In the Fall 2017 semester, Jeffrey Leichman taught FREN 4030, "Gaming the Enlightenment," in the Department of French Studies at Louisiana State University. This is an upper-division undergraduate class that was developed as a result of the VESPACE project. Students were assigned primary reading from the corpus of plays at the fair (Lesage's *Arlequin roi des ogres* and Fuzelier's *La Matrone d'Ephèse*), accompanied by selections from Isabelle Martin's cultural history of the Fair, *Le Théâtre de la Foire, des tréteaux aux boulevards*. This reading was juxtaposed with a classical sociological theory of games (Roger Caillois' *Les Jeux et les hommes*) and modern perspectives on game design theory (Eric Zimmerman and Katie Salen's *Rules of Play*). The principal analytical work of the class consisted of designing games – card games, board games, society games, video games – derived from the Fair plays students had read. These games were subject to play-testing and revision, with a significant role assigned to peer evaluation. In October, the class traveled to Nantes, France, where they presented their work to MA students at the Université de Nantes, in a curricular excursion that was financed in large part by the Friends of French Studies charitable organization. For a number of students, this was their first experience with travel abroad, serving also to fulfill course objectives of critical engagement with literary texts through significant target-language oral expression. The

concluding unit proposed a meta-examination of the pedagogical effectiveness of games and game design as teaching methods for French literary history, asking students near completion of their college experience to think critically about the ways that they have been trained to acquire knowledge, and how to prolong and transform these skills after their formal education ends.

In October 2018, Paul François and Isabelle Duval represented the project at the seat of the Regional Council of the Pays de la Loire in Nantes, France, in the context of the annual “Fête de la Science” event that takes place in major cities across France every year. Four large-scale display posters explained the historical background of the Fair theatre, the challenges of reconstituting its spaces, and the methodologies of Knowledge Lifecycle Management (KLM) that inform the approach to technologically mediated preservation of intangible cultural artifacts. Alongside these informational displays, users were invited to experience the VR re-creation of a marionette theatre created by Mr. François; nearly 300 members of the general public took advantage of this opportunity to strap on HTC Vive goggles and move around the virtual room, taking in the carefully reconstructed spaces, textures, and lighting that make this a particularly convincing sensory experience. On the second day of this event, Mr. François joined Florent Laroche, Françoise Rubellin, and Jeffrey Leichman for a public roundtable on the VESPACE project, excerpts of which were subsequently included in a radio report created about the project. These activities illustrate our team’s commitment to create work that not only holds its own among scholarly productions, but also is able to bridge the chasm between the world of university research and the general public.

e) Image depth

As will have been evident in previous sections of this white paper, our project is situated firmly in what David M. Berry has characterized as the “third wave” of digital humanities projects which is “critically reflexive about its engagement with computation / the digital as an object of research, as part of the problematic of humanities scholarship in the digital age” (Berry and Fagerjord, 35-6). This critically reflexive stance seeks to situate our work within a ongoing interrogations of institutional and intellectual trends that are a shared feature of much scholarship in humanities fields. These concerns have animated our conceptualization of the VESPACE project not only as a vehicle for advancing a particular scholarly position, but as a reflection of how scholarship is produced, evaluated, and perpetuated in the digital humanities context. In addition to our commitment to interrogate the material and institutional structures that define the conditions in which our work can be undertaken, we have been engaged from the beginning of our discussions in a critical examination of our own project’s epistemological implications, in the hopes to contribute to a clearer understanding of the ways in which digital humanities represents a significant disciplinary reorientation, rather than a simple layering of new tools on time-tested intellectual frameworks.

VESPACE seeks to bring together different kinds of digital tools that have been developed for other projects in an integrated interactive simulation. We have used the term “video game” as a shorthand for the form we are working in; the advantage of this term is that it is immediately recognizable, although nearly everyone has a different understanding of what it means. The salient feature for our project is the idea of user performance as a necessary component for accessing the extent of the scholarly intervention; the theory of social interaction encoded in the game is only discoverable in the context of active participation by the user, and the program is designed to ensure that the kind and quality of the interactions between human and machine will not unfold in an identical manner for each play-through. This is not a simulation that plays out autonomously, like a film, but rather one that requires repeated engagements by users in order to elaborate a theory-in-action that includes user performance. In this way, our project leverages the digital format to pose an epistemological question about the possible role(s) of present performance in producing embodied knowledge about the past.

The other salient aspect of the VESPACE project is its decision to work in a virtual reality sensory environment, where the persuasiveness of the images is such that the active choice to believe in them or not is effectively evacuated. In the classical conception of Vasarian space, the viewer of the image is situated at the apex of a pyramid of sight lines that determine the shape of objects on the picture plane, so as to produce an illusion of continuity between the viewer’s body and the represented space. Photography subsequently used lens technology to bend light waves so as to imprint reflected light on a chemically treated planar surface, representing a mechanical means to produce images that comprehensibly map three-dimensional space onto two-dimensional supports. Cinema pushes this progression even further, adding the dimension of time to the spatial representation and thus making a primarily visual medium into a legitimate competitor for the primary function that Aristotle assigned to theatre, the representation of action. Each of these innovations in the technology of illusion has changed the understanding of human perception and its relationship to what we understand as truth; virtual reality has the potential to do the same, and as humanities researchers working in this medium we feel an ethical and intellectual obligation to contribute to the critical understanding of this powerful tool.

This is what motivates our guiding design principle, “image depth,” which seeks to create the conditions for a critical engagement with the illusionistic environment of virtual reality reconstitutions. The VESPACE project seeks to re-create a spatial and social environment that no longer exists. In a traditional discursive or even visual context, these theories would be bracketed by the traditional tools of scholarly caution: competing theories, caveats, footnotes referring interested scholars back to the source materials supporting the speculative or theoretical constructions proposed. However, time-based virtual reality simulations don’t inherently come with these safeguards. The principle of immersive VR spaces is a kind of perfected Vasarian space, where the “pyramid” (in reality a far more complex set of shapes belonging to the field of descriptive

geometry, including varyingly curved lines at the periphery of the visual field) moves at all times with the viewer, dynamically adjusting elements in the projected space to the viewer's actual position in such a way that the perceptual "truth" of the images is no longer a question of voluntary adhesion to pictorial conventions; one can be fully aware of the essentially false nature of what one sees, but the illusion of presence is no less complete.

This ability to impose a sensory truth has particularly important ramifications for historical simulations, not least in the case of a cultural space with no material traces in the contemporary world. While we are invested in our theories about the spaces, sounds, and customs of the Fair theatre, as humanities scholars we are also committed to vigorous evidence-based debate of interpretive theories. Image depth seeks to facilitate this, by allowing – and eventually, requiring – users to understand their visual environment as a construction based on research, and thus contingent and subject to revision. By sowing the visual environment with information relative to the decisions behind different elements in the sensory environment, image depth seeks to disrupt the impenetrable flatness of the screen (a flatness that is occluded, but no less present, in VR environments) by revealing the evidentiary and technical underpinnings of the representation. By making this metadata an inseparable part of the sensorium, image depth reclaims, for non-discursive digital research, certain scholarly safeguards that have long underwritten the confidence accorded to humanities scholarship, inviting users to assume a critical posture with respect to the technologically-mediated environment just as readers are invited to do with respect to written work. This is especially important at a time when, in humanities research as in the wider culture, computers increasingly occupy a contradictory status, at once the guarantor of epistemological authority and the source of pervasive untruths.

Image depth applies to every part of the VESPACE reconstitution, and implies a reconceptualization of many aspects of the project's technical implementation. Thus the architectural renderings that have already been accomplished may have to be reprogrammed in order to incorporate this interface, a engineering challenge that also contributes to the sustained interest the project has elicited from computer science partners, for whom this paradigm also represents an innovation in their work. Likewise, the social image presented must be susceptible to the same analysis, and be similarly open to exploration of its sources and theoretical presuppositions. Even the aural environment must be submitted to these protocols, which implies a re-thinking of the linearity and reversibility of time within the game. Finally, the game itself, as a superstructure that governs user interaction with the various interlocking models of the re-created environment, can be made to incentivize critical exploration of deep images, while also being subjected to a similar interrogation of its presuppositions and formal constraints.

As we continue to develop the VESPACE project, and in particular as we work towards building a playable prototype (hopefully within a year of securing additional grant support), there remain a great number of technical challenges

that will require innovative solutions. It is possible – likely even – that the resulting product will be different from what we now envision, and in keeping with our commitment to incorporating new ideas and partners, it will continue to give rise to further unexpected collaborations and tangential outcomes on the way towards the primary goals we will have defined. Perhaps the most important takeaway from the work we have been able to accomplish during the period of this Phase I Digital Humanities Advancement Grant is a practical understanding of digital humanities as a powerful paradigm for *thinking* the relationship between culture and technology. Even digital objects begin their existence as ideas, and critical humanism is an essential component – along with technological know-how and procedural, problem-oriented thinking – in assuring that the tools with which we apprehend and analyze our world do not foreclose debate, but rather incite us to further inquiry and exploration.

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V-ESPACE NEH DHAG meeting 11/2-11/3, LSU Baton Rouge

This was a very useful meeting that clarified a number of our most urgent open questions, as well as pointing the way towards further work that remains to be done. Our sessions were organized as informal presentations of the past work of participating scholars, their relationship to the project, and their thoughts on how we might best advance project goals while preserving the integrity and high standards of our research.

History

A meeting to discuss options for approaching the V-ESPACE project was held in Nantes, France, on May 15-16, 2017. This meeting, organized by Professor Françoise Rubellin and supported by a French CPER grant for the Pays de la Loire, was not convened under the auspices of the NEH, but did address questions around the feasibility of an interactive VR re-creation of the Fair theatre. The meeting revealed a broad-based enthusiasm for the general principles of the project, as well as a distinct need to more clearly define project goals and deliverables.

Among the very valuable contributions to emerge from this meeting included an awareness of the importance of accurate and well-sourced sensory reproductions, not only in the realm of the visual environment, but equally in the domain of historically appropriate acoustical modeling of soundscapes. (A number of sound-studies researchers were invited, including Mylène Pardoën, lead researcher on a VR acoustical model of the Grand Châtelet neighborhood of Paris in the eighteenth century.) Small-group work led to a number of game-play ideas related to how to enter into and successfully navigate the game's spaces, including the necessity of gaining certain basic competencies in period-specific comportment prior to being allowed to enter, and a guided play mode in which an NPC accompanies inexperienced players, providing cues and hints. It was widely agreed that the game would be difficult for players unacquainted with eighteenth-century French theatrical culture, and that this needed to be taken into account when designing the experience such that players can be assured of reasonable success early on, in order to motivate further play and exploration.

This meeting also clearly underlined many of the primary challenges that faced the project as it was initially articulated. In particular, the absence of extant buildings and reliable plans for the Fair theatres in the 1720s raises a question of basic accuracy in a virtual reconstruction. Iconographic and discursive sources give interpretations of the theatrical spaces in question, but the prospect of relying solely on these raised concerns about the reliability of any eventual product as a teaching tool. Notarial documents indicating that the fair theatre moved into a "jeu de paume" (indoor tennis court) during the renovation of their space at the Foire Saint-Germain appears to confirm that the performers would have been able to adapt their style of play, sets, and dramaturgy to this

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architecture, which was a common interior design for theatre spaces in early modern France.

Moreover, there was significant discussion of the target audience for this project, with opinions divided between a pure research application and a more pedagogically-oriented final product. Likewise, the group had a vigorous debate around the necessity and goals of interactivity and gamification, versus a more passive user experience whose unidirectional communication bears a stronger resemblance to standard scholarly practices in both the humanities and the natural sciences. While my own preference was for a truly interactive, game-based model in which the player's success is keyed to both acquiring and generating knowledge in a system that is characterized by emergent (rather than determined) outcomes, we did not reach consensus on this point. Finally, this underscored the need for a far more strongly defined research hypothesis around which to structure reflection and work on the project.

Hypothesis

Our meeting began with the articulation of the following hypothesis, which was proffered as an initial means of structuring the discussions to follow.

A virtual-reality re-creation of an eighteenth-century Paris Fair theatre, including dynamic social modeling of interactions among audience members, can deepen our understanding of what it meant to be in a public space, and particularly to be a part of a theatrical public, in the early eighteenth century. By situating this project as a game in which players assume the role of spectator, our goal is not to reproduce an "authentic" eighteenth-century theatre sociability, but rather to allow twenty-first century users access to the material and social constraints that conditioned the experience of attending this theatre under the ancien régime. Users generate data as they chart highly individualized pathways through the game environment in pursuit of campaign-specific goals, which in turn allows us to compare archival sources with player decisions as they are affected by a variety of factors (social status, age, gender, etc.) that limit or enable navigation within an interactive historical simulation. As an iterative experimental framework, the game model also allows researchers to devise ever more specific research questions in the form of new roles and objectives for players, whose performance (game play) becomes an essential collaborative element of the research project. One corollary of approaching this re-creation as an emergent system, is a reevaluation of the traditional hierarchies of historically-based scholarship in light of digital media. By translating the data and analysis that has traditionally been the domain of the printed (or online) monograph into a sensory world in which knowledge is generated both through "meaningful play" and contextual reading, video games offer a bridge between the dynamism and emotional connection of visceral experience and the necessary remove of rigorous and well-documented

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scholarship, giving rise to a hybrid model of scholarly communication for the digital age.

Each of the ideas in this statement results from discussions of individual areas of expertise from participating scholars. Among the most important caveats to emerge from our meetings – a point that repeatedly recurs in discussions of other aspects of the project – is the necessity to preserve the traceability of the data upon which we base our decisions, in everything from architectural reconstruction, to player-NPC interactions, to the acting style on the theatre's stage. This is particularly important in light of the sensory persuasion that VR environments are able to summon, and the assumptions of authority and veracity that often attach to information presented through digital media. In places where the archive is incomplete, it is incumbent upon us as scholars to foreground this gap in our knowledge, and to present, in as clear and accessible a way as possible, the justification for decisions that have led to design choices. This also reflects a commitment to technological literacy that is increasingly a part of the ethical responsibility of digital humanities researchers, for whom the guarantee of intellectual value in new media projects rests on a respect for standards of evidence that have been developed to underwrite the authority of peer-reviewed print scholarship. Incorporating these standards, and acknowledging our interpretations, is essential to our vision of advancing the state of knowledge in history, literature, and performance studies, and remains one of the signal design challenges of this project.

Destinataires

Problems and challenges for English language users

An important element of our discussion in Baton Rouge concerned the eventual end-users of this project, which was also a question that arose in the May meeting, although in that instance the focus was on what research groups might most directly benefit from this work, whereas in November, having arrived at a consensus in favor of the game format, the question was more oriented around the characteristics and needs of eventual players. In both instances, the multi-national collaboration inherent to this project requires a nuanced answer.

With respect to research communities, this project should be of interest to humanists in the fields of European history, theatre history, French studies, and performance studies. Our focus on an relatively under-studied aspect of early modern theatre culture, which nevertheless occupied an important place in the cultural economy of eighteenth-century Paris, makes this a unique opportunity to reevaluate presumed cultural hierarchies in light of current research into the Fair theatre's esthetics, performance practices, and place in the social fabric of the French capital. Because this project presents as a sensory environment, scholars will be especially interested in the ways in which we will make the underlying research data (articles, monographs, visual resources) available, both in order to understand (and challenge or correct) our interpretations, and as a model for disseminating research in an accessible, inviting format. As Fair theatre is very much an active and evolving topic of study, this project seeks less

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to provide a definitive view of the field than to elicit further scholarly contributions in response to our research and interpretations.

This project also holds interest for researchers in diverse fields related to computer and information science. With respect to the visual and aural environment that we are seeking to create, careful architectural reconstruction based on extant plans as well as pictorial and discursive sources places this project squarely within the evolving field of digitally-mediated preservation of historical patrimony, including researching and recovering past technologies (in this case, the vast trove of machinery employed in the creation of theatrical artifice) in mechanically accurate computer-assisted recreations. This work has a strong connection to modeling environments for virtual reality, with respect to visual, aural, and tactile elements of historical re-creation. This environment in turn conditions the user's experience of game-play, which itself poses a variety of research questions for artificial intelligence-based social modeling for interactive games. The engines of these AI-based systems require a large amount of data to allow them to simulate complex social interactions, raising questions around the sources, organization, and traceability of this information. For researchers in data interface and design, the entire project poses a series of interlocking questions about how users – from advanced scholars to casual gamers – can access and explore the underlying research that informs every aspect of the sensory and interactive experience offered by the end product.

While the French gathering focused on research users of the project, in the US we addressed more concretely the ultimate audience for a game that is conceived as a teaching tool. In this respect, the game aspect of the project is of obvious and central importance: the idea is to meet young students where they are, to engage them in a format and with a tool with which they are already familiar, in order to make high-quality research available and relevant for contemporary students. In American universities, this work should have broad applicability in a number of humanities disciplines, including History, Theatre and Performance Studies, French Studies, Game Studies, and Digital Humanities. Conceived by scholar-teachers, this work is intended to be accessible to all levels of undergraduate students, and the campaign-based structure allows for instructors to tailor the experience, choosing game options that require more or less advanced knowledge and time to complete according to their respective pedagogical needs. Given the depth of scholarship that will be required to complete this project, it will also be suitable for graduate studies, both as a paradigm for digital organization and dissemination of knowledge and as a vehicle for teaching advanced content related to early modern studies and theatre.

One of the major considerations for making this work broadly accessible in the American context is that of language. In order to expand our potential audience, accommodations for non-French speakers will have to be integrated at an early phase of the project's conception, including campaign tailored to non-Francophone players and the integration of optional subtitles throughout the game environment. This also provides the impetus for ancillary humanities projects, including complete annotated translations of the plays presented in the

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course of the game, thus expanding the availability of these texts to scholarly and performing-arts communities in the Anglophone world. This might also point the way to even greater extensibility of the project into other linguistic and national traditions.

In the French educational context, the stakes are somewhat different: a game built around Fair theatre holds the same structural appeal as for American students, but represents a much more immediate and accessible reevaluation of cultural patrimony, and thus could be deployed as a teaching tool to a far greater public, including both high school and college students in French literature, history, and performing arts classes. By the same token, the more narrowly defined curricular options available to French teachers, particularly at the high school level, will require us to ensure that our work meets the norms and standards of the Ministry of Education, which in turn could be a powerful partner in leveraging this innovative classroom resource. Similarly, in the higher-education space, this game will have a potentially far larger audience because of the lower barriers to access (notably with respect to language) and the far greater numbers of students studying topics related to French culture and history. Again, the campaign-based structure allows for instructors to tailor this tool to their particular needs, from high school through masters-level students.

Spaces

Among our most involved and contentious conversations have revolved around the theatre space that we will model in the VR environment. Our commitment to using Fair theatre as the setting for the environment affords us the opportunity to bring attention to this under-studied feature of French cultural life in the eighteenth century, and to greatly enrich the understanding of how literary, musical, and performance traditions during this period were far more porous and non-hierarchical than is often understood. As historians, our groups generally subscribes to the theories of Michel de Certeau, for whom space is principally a social construction, and as theatre specialists several of us (including Jeffrey Ravel, Pannill Camp, and Jan Clarke) have had opportunities to make significant advances in the understanding of theatre space in particular as a concatenation of social, artistic, and scientific space. Yet given the specific exigencies of our project, we are also required to furnish the exact dimensions and contours of a computer-assisted reconstruction. In this respect, working with Fair theatre presents a number of objective challenges – most notably, that none of the theatre structures from the Saint-Germain fair are still in existence, and other than relatively scant iconographic evidence, we possess little in the way of visual or architectural representations of these spaces.

With the recent addition to our core team of Paul François, an architect whose doctoral project will focus on VR modeling work for this project, our conversations at this recent meeting were able to take more fully into account some of the architectural challenges that confront us. Paul presented on his past work, which included the virtual reconstruction of a 12th-century church in Jerusalem, of which little remains other than a field of broken and dispersed

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stones. Working with archaeologists, he was able to propose and model the entire space in a way that is both historically and structurally sound, based on the shapes of the still extant blocks and the example of other churches from the period that are still in existence. Of particular note was that the final model included two proposals, each of which presented a plausible and period-appropriate way of reconstructing the church. This result dovetailed with Arianna Fabbriatore's approach to dance historiography, in which the unrecoverable object is the subject of a careful analytical reconstruction that concludes in a range of possibilities which can all be considered true. While dance, as an embodied practice which is arguably never the same twice, presents a distinctly different set of historiographic challenges from those presented by the durable materiality of built environments, the methodological considerations from the point of view of reconstruction of a lost original are nevertheless similar; in both cases, comparative and genealogical studies, iconographic and written sources, as well as current practice, all inform the resulting range of possibilities that scholars can confidently use as the basis of theories about the past. As in many areas of scientific inquiry (as any paleontologist will confirm), this work is always subject to revision based on new evidence and new methods of reconstruction; and indeed, one of the goals of our project is to put forth a scholarly interpretation that will spur further research, which may eventually overturn our own conclusions.

With respect to the Faire theatre, Françoise Rubellin has assembled one of the world's most complete iconographic collections of representations of these spaces and performances. Of the paintings and drawings that represent interiors that could be plausibly ascribed to the Saint-Germain Fair in the 1720s, most are not architecturally viable, nor accurate in terms of performance history. For the purposes of capturing the variety and spectacle of the Fair, artists frequently depict spaces out of proportion, with load-bearing walls and columns moved in ways that facilitate the viewer's apprehension of the scene, but do not respect the buildings integrity; likewise, they often simultaneously depict actions that would have occurred sequentially, in order to memorialize the variety and spectacle of these performances. While these paintings, including several extraordinary snuff-box covers by the Blarenbergh brothers, offer up a wealth of information about theatre interiors, public sociability, and the permeability of stage and audience spaces, they present epistemological difficulties as the sole sources of a scholarly reconstruction, as they require a very large measure of speculation.

A doctoral researcher participating in the May meeting, Fanny Prou, brought a remarkable document to the group's attention: a notarial contract outlining the alterations to be made to a *jeu de paume* (indoor tennis court) on the rue de Bussy, abutting the Foire Saint-Germain, while repairs were being made to the theatre in 1726. The *jeu de paume* was perhaps the most common location for indoor theatres in seventeenth-century France, as the royal game of tennis that had enjoyed a great vogue in the sixteenth and early seventeenth centuries resulted in the construction of these vast, shoebox-shaped interior spaces in many private residences of the upper nobility in both the countryside and large

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urban areas. As the game fell out of favor, and theatrical entertainment became an increasingly prized pastime among the less militarily-oriented aristocracy in the seventeenth century, these spaces became both temporary and permanent homes to theatrical troupes in the age of Corneille and Molière. Panill Camp, a project team member who specializes in the transformation of theatrical spaces in the eighteenth century, has amassed a large personal archive of architectural drawings and iconography around the *jeu de paume* theatre, which he presented to the group. Basing our reconstruction based on these designs holds several advantages: as this was the most common type of theatre space during the early modern period, our model will have a greater general applicability; there are still extant *jeu de paume* structures, which can be precisely measured for both interior and exterior volumes and architectural features, to the extent that these have not been irretrievably altered; and there is an enormous wealth of images, plans, and verbal descriptions from which to cull particularities and determine commonalities across what were often idiosyncratic buildings. Architecture is a key component of the social space that our project seeks to model, and the rigorously stratified social geography of these spaces is both well-documented and essential to our working theory of early modern French theatre spaces, from the large open space of the *parterre*, or pit, a predominantly (if not exclusively) masculine space full of standing spectators, to the private *loges* ringing the stage, often rented by the season for the exclusive use of aristocrats or wealthy non-nobles, to the steeply raked seats of the *amphithéâtre* at the back of the house for less well-heeled, mixed-gender spectators. Finally, the actual stage of the *jeu de paume* is also well-documented, including the spaces devoted to machinery both beneath the raised floor and in the wings and flies.

The most important caveat about using this space is that, while we can document that Fair theatre troupes could adapt their work to a *jeu de paume*, and while this architecture would have been familiar to anyone who regularly visited the theatre in Paris during this period, we cannot say for certain that any of the theatres in the Foire Saint-Germain was built along these dimensions. (It seems unlikely, given the Fair's overriding purpose as a commercial venue, that there would have been a *jeu de paume* already in existence that could have served as a home to any of the troupes.) While it can't be ruled out that the theatres that were built had the same general shape, the archival evidence simply does not exist to confirm this supposition. Indeed, several of illustrations and paintings that depict less prestigious theatres seem to indicate rooms that were of a very different shape, with a far smaller audience capacity, and a substantially different distribution of social groups. While complete architectural plans exist for a proposed 1762 building that would have housed the Opéra Comique at the Saint-Laurent Fair, the group rejected this building design on two grounds. First, it does not belong to the right period; for reasons related to repertoire and performance history, the period of the 1720s, during the end of the Regency and the beginning of the reign of Louis XV, is the most interesting for our purposes (see below). Second, if it was ever built, it would have been at the wrong locale; the Saint-Laurent Fair, which took place in the summer, catered to a less socially diverse public, as the aristocracy largely abandoned the city for their country estates, and soldiers were off on campaign, in the warm summer months. By

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contrast, the Saint-Germain Fair, which ran from Pentecost to Easter, welcomed a more truly representative cross-section of eighteenth-century French society.

One of the signal differences of this project with respect to other historical recreations of eighteenth-century spaces is our commitment to filling the spaces with bodies, and to making moving a body through space – with all of the physical, social, and political constraints that this implies – integral to the game-play for which we are creating this simulation. This consideration motivated an exercise in embodied research, and allowed us to spend several hours as a group thinking about, and experiencing, space with respect the human body in movement. We taped out a full-scale floorplan of the *parterre* of the 1644 Marais theatre, a *jeu de paume* space that housed one of the seventeenth century's most important theatrical companies. Additionally, we taped out a 1:2 scale floorplan of the entire Marais theatre, including the stage space, *loges*, and *amphithéâtre*. These spaces then served as the field for a series of movement exercises based on the Viewpoints system of analyzing and composing movement for the stage, lead by Jeanette Plourde. This method has the advantage of breaking down movement into component aspects in order to heighten performers' awareness of, tempo, duration, kinesthetic response, repetition, shape, gesture, architecture, spatial relationship, and topography. In the context of our research, this work was a useful reminder of the finality of our reconstruction, which is not a two-dimensional representation of an empty space, but rather a three-dimensional projection of volume that includes a crowd of people in movement. (Viewpoints may also eventually play a role in designing rules for the movement patterns of non-player characters.) Following these exercises, Arianna Fabbriatore lead the group in a workshop on eighteenth-century movement, exploring the notions of constraint, personal space, and socially-marked gesture that distinguish movement from this period, as well as introducing some elementary principles of baroque dance, which formalized and stylized many of these rules of physical comportment. In giving over a considerable amount of time to these exercises, we reaffirmed that space, in this project, is as important for how it permits, impedes, and conditions player (and non-player character) movement as for the meticulous reconstitution of lost historical structures.

With this in mind, and working from a Blarenbergh painting showing a scene underneath the massive wooden eaves of the Foire Saint-Germain, where a crowd can be seen milling in front of several theatres (see figure), we came to a consensus as a group to embrace both the uncertainty inherent to any reconstruction of a Fair theatre, as well as the multiplicity that defined Fair theatre in the eighteenth century. As the painting indicates, and as had been borne out in recent research, notably in the work of Françoise Rubellin, it is incorrect to speak of "the Fair theatre," as in truth there were a number of theatrical operators, simultaneously showing different kinds of spectacles and in competition with one another, under the aegis of the church-sponsored commercial fairs. These considerations provide a foundation for modeling several spaces, ranging from an historically verifiable *jeu de paume* to spaces that are based on more interpretive representations (paintings, sketched floorplans) that would have housed different kinds of theatrical enterprises. This decision

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has a number of very important, and largely advantageous, effects on gameplay as well; different campaigns, with different kinds of social goals, requiring different kinds of linguistic and gestural competencies, can now be keyed to different spaces as well, ranging in design and topography from the simple to the highly developed. Moreover, it implies a portion of the game that takes place outside of the theatre space (and thus will imply modeling at least part of the massive indoor mall of the Foire Saint-Germain). As in all aspects of this project, a signal design challenge consists in making our conjectures and interpretations, as well as our documented sources, clear and accessible to users. While the decision to model multiple spaces makes the task of architectural modeling more complex, it represents an ethically acceptable means for acknowledging both the state of our scholarship and the gaps in the archive, as well serving as an invitation to further research in order to refine and revise our understanding of the possible spaces of early eighteenth-century Fair theatres.

Game ideas

Following on the embodied research that began the second day of our meeting, Marc Aubanel provided team members with the opportunity for a VR experience using an Oculus Rift VR gaming bundle (including headset, touch controllers, and sensors), running software on an MSI laptop. (The current consumer price of this setup is approximately \$2100, a price that will continue to fall as this technology becomes more widely adopted; in this respect, conceiving of this project for a virtual reality environment should place it well within reach of most higher education institutions by the time we would have a playable prototype.) For at least four participants, this was a first contact with VR technology, and the sensory immersion (stereoptic images at 90 frames per second, stereo sound, interactive handsets) provided a powerful argument for adopting this platform for the interactive environment. The experience of a commercially available RPG was also revelatory, introducing firsthand the considerations of acclimation to controllers and accomplishing specific tasks and interactions with avatar hands according to patterns that the game would recognize. Part of our considerations of space, as per Rufat and Ter Hovassian, must include the space of the player, especially as a project goal is to abandon the recumbent and hunched postures of most video games in favor of a far more expressive use of the body in the part of the player. There is both research and educational importance to experiencing the physical constraint of the eighteenth-century body while navigating the virtual world for the Fair theatre public. In this way, we are also thinking around the corner in terms of this technology, making an effort to either drive innovation or help refine innovations already underway – some of our game activities are predicated on either a system with sensors on the feet, knees, hips, elbows and shoulders, or a sensor-free system that is able to read the body in space.

Broadly speaking, the idea of the game is that players are members of the audience at the theatre, and must accomplish a goal that requires them to interact in this unique public space of the eighteenth century. While you're in the theatre pursuing your goals, a performance is also unfolding onstage, the length

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of which serves as the countdown clock for gameplay. [See below for fuller treatment of the stage play.] During the meeting, Ben Samuels spoke of the campaign structure of *Prom Week*, which seems well adapted to our own needs as well: different kinds of goals can be pursued, requiring different levels of behavioral competency, with each campaign building a repertoire of social modalities that will serve in future campaigns. Indeed, Samuels' presentation of his work on *Prom Week* provided us with a strong foundation for conceiving of our game's interactivity; in this award-winning game, the "social physics" engine that calibrates the rippling and cumulative effects of exchanges between characters and NPCs as they navigate the lead-up to Prom in a contemporary American high school relies on thousands of individually authored rules derived from movies, TV shows, and other cultural artifacts. Based on the *Comme il Faut* architecture, rules could be extracted and collated from period sources (Crébillon, Marivaux, the Abbé Prévost, personal journals, and correspondence, among others). In this way, game design drives literary research.

Over the course of several structured brainstorming sessions, a number of ideas emerged as ways to conceive of the game, its objectives, and the specific kinds of interactivity that we would solicit.

Isabelle's idea of the scanner – this can be one of the functions of the handheld controller, to peel away at the image in front of you to reveal the source: from a chandelier to an image of one, to a real one, to the code that gives you the image: part of the goal is to give back depth to the computer image, to show that it does have an underneath, a history and a process that is so often occulted. This is one of the ways that design can help us "show our work"

Stage plays

Another crucial set of decisions that we confronted as a group was the nature of the staged entertainment that is to be performed while users pursue game-based goals as members of the audience. Françoise Rubellin, co-director of the V-ESPACE project, has longstanding ties to the professional performing arts community in France, where she has served as an artistic advisor (the equivalent of an American dramaturg) for a number of productions based on Fair theatre texts and music that have enjoyed successful tours to theatres throughout France and internationally (including projected performances in Boston in 2018). Initially, it had been thought that a licensing agreement could be negotiated with the artists involved in the most recent, and polished, of these productions, *La Guerre des théâtres*, directed by Jean-Philippe Desrousseaux, artistic director of the company Les Lunaisiens. The idea had been to capture an upcoming performance on digital video from a sufficient number of angles to be able to insert these images plausibly into the VR environment of the simulation. However, a number of technical issues quickly arose when discussing this plan. First off, the mechanics of compatible video capture were likely to be significantly more involved than had been our hope; the technical and material requirements for a usable capture would not have been possible for us to organize before the November 18 performance, which was to utilize period

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scenery from the collection of the Château de Versailles that had not been seen in public for several centuries. While we all regret missing this opportunity, Professor Rubellin's strong relationships in the baroque arts community in France hold out further hope for eventually incorporating both these and other historically accurate artifacts in the modeling of our simulated space.

As we came to the realization that direct transfer of this production was not going to be feasible, a more general discussion of the staged entertainment brought out a number of salient points. First off, in terms of periodization, the 1720s appears to present the greatest literary and social interest, as the repertoire from this era is relatively well-preserved (Dr. Rubellin has been editing and publishing annotated editions of Fair theatre texts for over 20 years), and includes examples of many of the major esthetic innovations that came about as a result of the relentless legal campaigns waged by the privileged theatres (the Comédie Française and the Académie Royale de la Musique, commonly known as the Opéra) against the Fair, which resulted in varying levels of artistic constraint. In this way, we plausibly have options to show monologues, marionette performances, audience sing-alongs with suspended supertitles, and more "traditional" *opéra comique* offerings that alternate between prose dialogue and sung vaudeville tunes. Moreover, this period represents a significant transition in early modern France, with the 1723 end of the Duc d'Orléans' regency in favor of the young Louis XV, who at age 13 was at last allowed to rule in his own name. The Regency, following the austerity of the end of the Sun King's long reign in 1715, has become known for its many excesses, at once a period of artistic renaissance and wild financial speculation, during which time the Fair theatre in particular, with its irreverent and somewhat bawdy humor, found favor among the caretakers of the realm. The return to a hereditary monarch, whose government was nevertheless controlled by ministers with significant political experience, marks a change in fortunes for many cultural institutions, the Fair included, which makes this period especially appropriate as the setting for our reconstruction.

Technically, team members with experience in 3D modeling for video games suggested that motion capture would be a far more efficient and ultimately less complicated way of importing the movement and actions of performers into the VR environment, with its requirements for proportional scaling and 360-degree accessibility, according to the perspective of the user. This requires actors to wear sensors while performing in a specially equipped studio that allows their gestures and postures to be preserved, but does not capture facial expressions or exterior elements like costume, which are filled in later in the process. In our discussions, it became clear that experience performers, who could give expression to the complex and dynamic physicality of the commedia-based performance style, would be crucial to ensuring that the staged entertainments carry an equal research and pedagogical value as the architectural and interactive reproductions that we are proposing. (Subsequent conversations between Françoise Rubellin, Jean-Philippe Desrousseaux, and Bruno Coulon, an expert in the Arlequin role, have established that the artists would be open to participating in an eventual motion-capture for integration into the V-ESPACE

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project.) The logistical concerns related to this aspect of the project are quite significant: this will require selection and rehearsing of plays, assembling the requisite technical personnel for the motion capture, and working alongside musicians capable of executing the baroque music essential to these productions. In addition to representing significant financial investment, this process will also require legal assistance in negotiating contracts that ensure proper compensation in exchange for release of rights to the work product created by the artists, as governed by French law.

These discussions were also significantly useful in reminding us of the thrust of this project, which is to afford users an embodied experience of participating in the audience of a public theatre in early modern France. In this respect, the criteria that would apply to mounting a professional touring production of a Fair theatre play in the contemporary world do not always apply. While ensuring a high quality of performance, especially with respect to actor physicality, is as important as ensuring the historical detail of the theatre's interior decoration, the strength of our project is to bring together a large number of individual research projects in service of a research question that is, hopefully, larger than the sum of its parts. With this in mind, we continued discussing the needs of the overall project with respect to dramatic literature and performance, which lead to two important conclusions. First, given the decision to model several architectural spaces, it follows that the performances in each should not be identical. This allows for a far greater variety of theatrical entertainments, which is also a more accurate representation of the multiplicity that characterized the Fair theatre during this period. For example, one could imagine a beginning-level campaign that takes place in a marionette theatre, which will allow users to become accustomed to the principles of social interaction in the game during an obscene monologue by Polichinelle, before moving on to more advanced campaigns that take place in a more complex architectural space, during the final act of an *opéra comique* complete with vaudeville sing-alongs, and which demands concomitantly more intricate social goals. Second, presenting evening-length works does not fit our specific needs in this instance. As Fair plays were often presented as detached acts or prologues that could be rearranged and presented according to what the operator thought would attract the largest paying audience, there is an historical justification for this kind of editorial intervention. Moreover, as the duration of the play also serves as a limiting factor in the achievement of the game's social goals, it was suggested that keeping the duration of the entertainment relatively short would also help encourage eventual players to focus on learning the complex rules of social engagement that they will have to master in order to achieve their goals; repeated play in the event of failure is more plausible if the game does not take three hours to complete. Finally, in at least some of the campaigns, a significant element of the player's objective will be related to the spectacle on stage – up to and including bringing the performance to a halt – which will require capturing performances in such a way as to allow for variation based on user decisions. Given the very large number of permutations that quickly becomes possible in dynamic interactive systems, this already presents a major technical challenge; limiting

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the total length of the performance is one way to contain the complexity of this task.

While these decisions provide us with a framework for selecting source texts for the performances, this work remains to be done. Moreover, the question of performance texts is intertwined with that of accessibility for non-Francophone users. As is the case in many areas of this project, each challenge gives rise to new potential research outcomes that have the potential to expand the reach of this work. In this instance, there is an opportunity to prepare annotated editions of works that have not previously been published, or to revise previous editions for online publication as addenda to the game. Likewise, any preparation of subtitles to be integrated into the game space implies translation of the spoken text; this in turn can serve as the basis for annotated English translations of these works, most of which are currently inaccessible to non-French readership.

Visual & Aural Style

One central question that was not addressed in the course of our meeting is that of the games overall visual esthetic. All participants acknowledge that cinematic-quality digital animation, particularly with respect to facial expressions, is well beyond the reach of this project. This will quickly become an issue of pressing importance as we begin planning for implementation in a visually-dense VR environment.

While many choices are plausible, we should perhaps consider this, too, as an opportunity to enrich the period-specific content of the simulated environment by drawing on the art-historical archive for figures, costumes, and expressions. Lifting images directly from classical works (paintings and sketches from this celebrated period in French art history) allows us to engage with the period's iconography directly, as well as obligating a certain simplification with respect to animating movement – there need not necessarily be an effort to model and animate these images as three-dimensional “people,” even as they mingle in the projected space of the VR environment. This “cardboard cutout” approach to NPCs is only one option, and a very strongly marked one with respect to overall visual style; this and other possibilities deserve fuller discussion among group members, and it may be useful to add art historians or digital illustrators to this conversation as well.

Similarly, the discussion of the game's soundscape, an essential element of the immersive universe of VR, received relatively little attention. Here, there are three main areas of research: the quality of sound propagation in various architectural environments, with varying numbers of people within them; the kinds of noises and utterances that might have been present inside the theatre; and the presence and usage of music in the theatre. Again, significant consultation with specialists will help clarify the issues and possibilities presented by these aspects of the game experience.

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VESPACE Meeting, 19-20 April 2018, Louisiana State University, Baton Rouge, LA.

Purpose: This was the second of two planned meetings of principal participants in the VESPACE (Virtual Early modern Spectacles and Publics, Active and Collaborative Environment), sponsored by the NEH Digital Humanities Advancement Grant (Phase I), award HAA-255998-17. The first meeting took place on 2-3 November, 2017, also on the LSU Baton Rouge campus. These meetings were convened in order to lay the theoretical and organizational foundations for a projected re-creation of eighteenth-century Parisian fairground theatre ("Fair theatre"), and to explore the challenges and opportunities involved in the spatial, sonic, and social recreation of this unique artistic milieu within the context of an immersive and interactive virtual reality environment.

The April 19-20 meeting was divided into four main parts:

- In the morning of 4/19, introductions and presentations of work-to-date allowed everyone to assess the current state of the project and begin to identify major themes of this meeting.
- In the afternoon of 4/19, we held a series of public "roundtable" panels, sponsored in part by the LSU Center for Collaborative Knowledge, which allowed team members to present their research on aspects of this project and to invite comment and discussion from the community.
- In the morning of 4/20, project members and selected participants from the LSU community took part in a hands-on workshop ("hackathon") using a custom-designed software authoring tool that is projected to eventually play a central role in the reconstruction of social interactions in the final version of the project.
- The final session of the meeting, in the afternoon of 4/20, was devoted to discussing future orientation of our work, plans for development of a playable prototype, and sources of funding to support our implementation.

Attendees: Jeffrey Leichman (LSU – Principal Investigator), Françoise Rubellin (Université de Nantes, Principal Investigator), Florent Laroche (Ecole Centrale de Nantes), Arianna Fabbriatore (LabEX OBVIL – Paris Sorbonne), Paul François (Université de Nantes), Jan Clarke (Durham University), Pannill Camp (Washington University in Saint Louis), Benjamin Samuel (University of New Orleans), Isabelle Duval (CETHEFI – Université de Nantes), Mylène Pardoën (MSH Lyon, France). Guillaume Raschia (Nantes Polytechnique) and Jeffrey Ravel (MIT) were unable to attend. Marc Aubanel (LSU) and Marco Cocito-Monoc (LSU) joined us for the final closed-door meeting on 4/20 from 1pm-6pm.

Project Status, Thursday April 19, 9:00am-12:00pm

Over the course of the five months that separated these two meetings, a great deal of work has been undertaken by project members.

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- January, 2018, Paul François produced initial hypotheses of spatial reconstruction for a marionette theatre in the form of 3D architectural renderings, which were subsequently revised and upgraded with further details. Exploration with Françoise Rubellin of P-A Demachy's paintings of the FOIRE Saint-Germain fire in 1762, in order to establish dimensions and interior architecture.
- January 24, 2018, Jeffrey Leichman presents the VESPACE project to the charitable organization The Friends of French Studies, including the Consul-General of France in New Orleans, Vincent Sciamia.
- January 24, Françoise Rubellin presents the VESPACE project at the Maison Française d'Oxford, England.
- January 25, 2018, Ben Samuel presents his work on Ensemble, a "social physics" engine that is being adapted to the VESPACE project, to graduate students in eighteenth-century literature at LSU.
- February 9, 2018, Jeffrey Leichman presents the VESPACE project at the Project Directors' meeting at the NEH on the occasion of the 10th anniversary of the Office of Digital Humanities.
- February 26, 2018, the VESPACE website (vespace.univ-nantes.fr) goes live; designed by Paul François, it includes a dedicated private space for project members to work on building up an OMEKA-S database of visual and textual resources that will eventually be included in the simulation.
- January-March, 2018, Françoise Rubellin and Paul François conduct archival research that establishes a new paradigm for understanding Fair theatre architecture and its place within the urban landscape of eighteenth-century Paris.
- March 9, 2018, Jeffrey Leichman presents the VESPACE project before the Académie des Sciences d'Outre-Mer at the LSU Law Center, Baton Rouge.
- March 13, 2018, Françoise Rubellin, Florent Laroche, and Paul François publish a call for interns to work on creating avatars for the VESPACE project; intern contracts signed at the end of March.
- March, 2018, Jeffrey Leichman submits an article on the VESPACE project (currently under peer review).
- March 22, 2018, Jeffrey Leichman presents VESPACE as part of a roundtable on the state of French theatre studies at the American Society for Eighteenth-Century Studies Annual Convention in Orlando, Florida.

Each of these presentations also served as an opportunity to refine and nuance our understanding of project goals, methodologies, and scope, and to receive valuable feedback from different communities whose members are stakeholders in the diverse areas of culture, scholarship and design united by the VESPACE project. Moreover, the continued engagement in a digital humanities endeavor has led to tangible research outcomes in what might be regarded as "traditional" venues for humanities research, including articles for scholarly journals and intensive archival work that significantly enhances our understanding of historical cultural artifacts, in addition to the development of digital tools and documents that will be crucial for integrating this knowledge within a computer-mediated framework.

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Roundtable Presentations, Thursday April 19, 1pm-6pm

On Thursday afternoon, from 1:00pm-6:00pm, a series of short presentations followed by discussion with the public were held in the Capital Chamber Room of the LSU Student Union, sponsored in part by the LSU Center for Collaborative Knowledge.

The first session featured Mylène Pardoën, who spoke about her ongoing work, the Projet Bretez, to re-create the eighteenth-century soundscape of the Quartier du Grand Châtelet, a neighborhood in central Paris that has since been destroyed by changes in the city's layout and development. Dr. Pardoën, who was in attendance at the VESPACE meeting in Nantes, France, in May 2017, accepted the invitation to share her expertise with our project, filling in a crucial area of expertise that had previously been missing from our discussions. Describing her work as "soundscape archeology," Dr. Pardoën detailed the significant archival work that goes into developing a portrait of an aural environment that has long since disappeared, including the use of maps, notarial records, and contracts, as well as how she handles subjective descriptions of sound contained both within works of literature and visual resources that depict life in Paris in the early eighteenth century. The output, which continues to be significantly revised after 13 years of research and refinement, is an explorable VR simulation of this neighborhood, where users can navigate 3D representations of the various streets and plazas (created with Unity software), while being surrounded by carefully reconstructed sounds – of workers, passers-by, vendors, livestock, the river, and much more.

The ensuing discussion brought up issues directly related to the ways in which this work might intersect with the VESPACE project, including how the treatment of human voices might be different (reflecting different codes of politeness and environmental factors); the ways in which streetscape noises do and do not enter a theatre space; the specific sounds associated with the mechanical equipment of the theatre; and the ways in which theatrical space attempts to channel sound. Of particular interest was the question of "image depth" with respect to the soundscape; the idea that end-users of the VESPACE project should have access to the underpinning documentation that supports interpretive choices with respect to visual representation should ideally apply to other objects of restoration (aural and social) as well. In the case of sound, which occurs in sequential duration, this presents a conundrum; how can one isolate a noise and subject it to greater scrutiny within a multi-sensory playable environment? One possible solution, proposed by Dr. Pardoën, is to build in temporal loops at certain moments, which would allow users who trigger them to circle back on moments or movements in sound, in order to both scrutinize them more attentively and to examine the research that support particular representational choices.

The next panel brought together four scholars from diverse backgrounds to talk about interaction and gamification within the reconstructed VESPACE

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environment. Françoise Rubellin spoke first, presenting research on anecdotes about audience comportment at the Fair theatre as examples of possible comportments and narrative events that could be included within the game. Isabelle Duval then presented on two kinds of archival resources, the first of which is an eighteenth-century board game, based on the popular “jeu de l’oie” (similar to Chutes and Ladders), featuring actors from the period. This game was presented as a potential ludic interstice (“mini-game”) within the larger VESPACE game, as a means to integrate both specific knowledge about period stage performers and less tangible understanding of socialization around games in the eighteenth century. Ms. Duval also briefly presented on judicial archives relating the various lawsuits and decisions that opposed the Fair theatres and their more established rivals, as illustrative of how documents from a wide variety of institutions might eventually figure into our resource bank, and help explain performance strategies of the various theatres in response to legal threats. Arianna Fabbriatore next presented on some aspects of the disposition of bodies in space within the framework of an historically accurate game, paying special attention to the need for accurate representation of bodily habitus and corporeal expression, with respect to both how characters move and how they use their bodies to communicate status, emotion, and relationships in a period-appropriate manner. Concretely, this raises question of how to incorporate the gaze, both in close proximity and across the reconstructed space, as well as the role and deployment of gesture as an indicator of social status. The final presentation on this panel was by Ben Samuel, who spoke about the “social physics engine” developed for the computer game *Prom Week*, which mobilizes cultural knowledge in order to assess the effectiveness of interactions between players and NPCs in a simulated social world – in other words, making social information playable. This software has several advantages for our project; first and foremost, it provides a way to integrate cultural information into a quantitative format, converting status, intent, personality, and other characteristics into variables that can be calibrated in order to determine the relative success of player initiatives, and their repercussions, within the particular historical and social universe of the game. Equally important, the enormous number of potential combinations means that, while the comportments may be learnable, the outcomes will never be predetermined or exactly repeatable, endowing the game with the subtle unpredictability of lived situations.

While discussion time was limited following these presentations, a number of the ideas raised provided important foundation for conversations on Friday. One question that stimulated some debate was on the importance of framing this project as a “video game,” a recurring theme that has been raised previously by the anonymous reviewers of the NEH proposal as well as by participants in the May 2017 meeting in Nantes. On the question of accessibility, it was suggested that orienting this work towards a playable model would ensure that a much wider audience, including non-specialists, might feel invited to use this tool, a consideration that is of particular importance for public funding agencies. Moreover, conceiving of a game obligates moving accessibility to the forefront of interface design in order to facilitate play, as well as necessitating clear and

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comprehensible explanations of the “rules” – in this case, the social universe of the eighteenth century – that will govern gameplay. The advantage of a model that requires users to accomplish defined goals lies in the impetus it provides for gaining competency in manipulating social/spatial conventions in order to advance through the environment, leading to the historical and cultural understanding that is the project’s pedagogical and preservationist justification.¹ Ideally, competency then motivates further exploration of more complex and demanding scenarios; likewise, near-misses or opportunities to improve incite repeated play-throughs that reward close attention to details that we will have worked at re-creating. With these essentially educational rationales in mind, it was also agreed that several modes of engagement with the reconstructed environment would be appropriate, including one where the user was not bound by mission-specific objectives, allowing for the freer and less directed exploration for those who wish to consult this work primarily as a research tool. The terms “game,” “video game,” and “play” elicit strong responses – both positive and negative – and should continue to be deployed judiciously, as they signal an openness to ludic unpredictability that can project either a forward-thinking intellectual curiosity or a lack of seriousness, depending on the associations and experiences of the interlocutor.

The final session of the day was devoted to questions around architectural restoration. also presented on the process of modeling. Florent Laroche presented his work on “knowledge lifecycle management” (KLM), a set of industrial processes intended to make sure that technologies are exploited throughout their usable life in a way that both maximizes the return perceived by the industrial client and prepares the transition to new kinds of knowledge to either replace or enhance existing technologies. In his area of specialization, 3D modeling, the goal is to produce a Digital Heritage Reference Model (DHRM) capable of integrating both geometric knowledge (representations of forms within projected 3D space) and semantic knowledge (the “content” of culture that allows researchers to understand the function and significance of the digitally preserved artifact). This approach has far-reaching applications to the VESPACE goals of modeling both the physical and social worlds of the Fair theatre. Pannill Camp then presented a discussion of theatre *space* as opposed to theatre *architecture* as a means for discerning the true object of reconstitution in the VESPACE project, drawing on Henri Lefebvre’s tripartite division of perceived, conceived, and lived (*perçu*, *conçu*, *vécu*) spaces. Within the context of this project, these distinctions help provide a theoretical framing for the question of reconstitution: the conceived space, the most mathematical and abstract category, corresponds to the geometry of the computer-rendered space; perceived space reflects the social practices fostered by various spaces, and the ways in which spaces reify otherwise abstract social categories; and lived space, which corresponds to how individuals understand and represent their own relationship to the world around them. This model affords an important

¹ The model of “competency before knowledge” is one of the major theoretical justifications for video game-based pedagogy; see Gee, *Good Video Games and Good Learning*, Peter Lang, 2007.

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perspective on the relationship between eighteenth-century culture and the space that it “produced,” and by extension how the abstractions inherent to VR environments reveal twenty-first century social relations at the core of our effort to “reproduce” an eighteenth century space. Jan Clarke next presented an overview of her work over the past few decades documenting the Théâtre Gégéaud, with special emphasis on how diverse documentary sources can lead to conclusions about lost spaces, both with respect to their architectural form and the ways in which their usage reifies social stratifications. Architecture thus emerges as a form of social control, a view that is also a central thesis of the VESPACE project. The final speaker, Paul François, presented an engaging and visually arresting overview of his research, conducted with Françoise Rubellin, on the location of Fair theatres in Paris from the late seventeenth century through the second half of the eighteenth century (cleverly presented in the form of a “Monopoly” board game superimposed over an historical map of Paris). This presentation significantly revises our understanding of the physical structures of the Fair theatre and their implantation within the urban space of ancien régime Paris, as well as advancing the argument that any accurate representation of the geography and architecture of early modern spaces must consider time as an equally important dimension when making modeling decisions. The presentation concluded by showing examples of the computer-assisted architectural renderings that Paul has already been able to execute, and he guided us through some of the obstacles he encountered in working from artistic representations, much as Mylène Pardoën had done at the beginning of the afternoon, enumerating strategies to account for distortion of actual spaces in service of narrative or pictorial ends.

Ensemble “Hackathon,” Friday April 20, 9:30am-12:30pm

Upon reconvening Friday morning, we were joined by three graduate students in the LSU Department of French Studies – Mallory Fuller, Rachelle Mosing, and Karine Bélizar – who would be using the Ensemble authoring tool for their final project in FREN 7032, a graduate seminar in eighteenth-century theatrical culture taught by Jeff Leichman. The session began with Ben Samuel giving an overview of the principles behind Ensemble, which is a further development of the Comme il Faut game engine developed for *Prom Week*.

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VESPACE Presentations

François, Paul, Florent Laroche, Françoise Rubellin, and Jeffrey Leichman « Mettre en place les fondations d'un outil de restitution à large audience : VESPACE », SCAN 2018 - Poster - National 2018

Laroche, Florent, Jeffrey Leichman, Françoise Rubellin, and Paul François « Humanités Numériques : la nécessaire interdisciplinarité » (roundtable), Fêtes des Sciences 2018, Nantes (France), 2018

Leichman, Jeffrey M. "V-ESPACE: Virtual Early modern Spectacles & Publics, Active Collaborative Environment" (roundtable on digital humanities). *American Society for Eighteenth-Century Studies (ASECS) National Convention*, 2017.

Leichman, Jeffrey M. "La Foire aux reenactments: Problématiques de la restitution d'un théâtre du dix-huitième siècle par le biais du jeu video." *Reenactment/Reconstitution: refaire ou déjouer l'Histoire?*, Centre Culturel International de Cerisy-la-Salle (France), 2018.

Leichman, Jeffrey M. "Old Regime, New Technology: Digital Humanities and French Theatre" (roundtable on French theatre). *American Society for Eighteenth-Century Studies (ASECS) National Convention*, 2018.

Leichman, Jeffrey M. "Lumières virtuelles" (research seminar). *Institut d'Etudes Avancées de Nantes*, 2018.

Leichman, Jeffrey M. "Virtual Enlightenment: Sensory Immersion, Video Games, and the Future of Digital Humanities" (invited lecture). *Durham University (England)*, 2019.

Rubellin, Françoise, Paul François, and Florent Laroche « Vespace », *De la donnée à ses artefacts*, EADH 2018 - Panel - International 2018

VESPACE Publications

François, Paul « La Foire Saint-Germain vers 1770 : images et mutations des lieux de spectacle », in *Permanence et mutations des espaces du spectacle vivant dans la ville*, 2018 (in press).

François Paul « Dans l'oeil de l'artiste : interprétation d'une miniature de Louis-Nicolas von Blarenberghe », in *Identité et circulation des spectacles forains* :

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musique, danse, acrobaties et marionettes, 2019.

François, Paul, Florent Laroche, Françoise Rubellin, and Jeffrey Leichman « Remonter le temps pour comprendre le passé : l’immersion virtuelle au service des historiens », EGC/GT-DAHLIA , 2019 (Under review) .

François, Paul, Florent Laroche, Françoise Rubellin, and Jeffrey Leichman « De l’usage à l’espace : prospective pour une rétro-architecture », S-MART, 2019 (under review).

Leichman, Jeffrey M. “Depth Match: Performance, History, and Digital Games” (under review).

Rubellin, Françoise and Paul François « Le théâtre du XVIIIe siècle, plus vivant que jamais », *The Conversation*, 2018.